

## **SCOPE OF DEMAND**

1. A substrate temperature measurement apparatus for measuring temperature of substrate characterized in that it is provided with:
  - 5 a chip made of metal material reflecting infrared ray or electromagnetic wave; having an inserting opening for inserting thermocouple wires which is crushed and deformed with said thermocouple wires inserted; united together with said thermocouple wires; contacted with said substrate; and
  - 10 a supporting member or members made of material of lower thermal conductivity than said chip, for supporting said chip.
2. A substrate temperature measurement apparatus according to claim 1 in which it is provided with pushing means for pushing said chip to said substrate.
3. A substrate temperature measurement apparatus according to claim 1 or 2 in
  - 15 which it is provided with shaking means for enabling said chip to shake on said supporting member.
4. A substrate temperature measurement apparatus according to any one of claims 1 to 3 in which said chip is made of any one selected from Al, Cu, Pt, Au and Ag.
5. A substrate temperature measurement apparatus according to any one of claims 1
  - 20 to 4 in which said supporting member is made of quartz material.
6. A substrate temperature measurement apparatus according to any one of claims 1 to 5 in which said inserting opening is so shifted from the center of said chip that the distance between said inserting opening and the contact point of said substrate and said chip is longer than the distance between the portion of said chip facing to said support
  - 25 member and said inserting opening.
7. A processing apparatus for processing a substrate under infrared ray heating or plasma generating condition characterized in that it is provided with:
  - a processing chamber in which a substrate is arranged;
  - a chip made of metal material reflecting infrared ray or electromagnetic wave;
  - 30 having an inserting opening for inserting thermocouple wires which is crushed and

deformed with said thermocouple wires inserted;  
united together with said thermocouple wires;  
contacted with said substrate; and  
a supporting member or members made of material of lower thermal conductivity than  
5 said chip for supporting said chip.

8. A processing chamber according to claim 7 in which it is provided with pushing means for pushing said chip to said substrate.

9. A processing apparatus according to claim 7 or 8 in which it is provided with shaking means for enabling said chip to shake on said supporting member.

10 10. A processing apparatus according to any one of claims 7 to 9 in which said chip is made of any one selected from Al, Cu, Pt, Au and Ag.

11. A processing apparatus according to any one of claims 7 to 10 in which said supporting member is made of quartz material.

12. A processing apparatus according to any one of claims 7 to 11 in which said  
15 inserting opening is so shifted from the center of said chip that the distance between said inserting opening and the contact point of said substrate and said chip is longer than the distance between the portion of said chip facing to said support member and said inserting opening.

13. A processing apparatus according to any one of claims 7 to 12 in which said chip is  
20 contacted with the back surface of said substrate the front surface of which receives infrared ray or electromagnetic wave.